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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
NGUYEN, LUONG TRUNG	
ART UNIT	**PAPER NUMBER**
2612	

DATE MAILED: 09/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/829,363	OHKAWARA, HIROTO	
	Examiner	Art Unit	
	LUONG T. NGUYEN	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 June 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *15-19,26-30 and 37-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *17,18,28 and 29* is/are allowed.

6)☒ Claim(s) *15,19,26,30 and 37-39* is/are rejected.

7)☒ Claim(s) *16,27,40* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed on 6/27/2005 have been fully considered but they are not persuasive.

In re page 12, Applicant argues that the description in applicant's specification referred to by the Examiner is with reference to a system which is believed different from the system of the Kikuchi patent. Moreover, the teachings together would not result in "position control unit which performs position control of said movable part via said actuator by updating the driving signal by a plurality of times during a vertical synchronizing period." Therefore, it is not believed that viewing the Kikuchi patent, in light of aforementioned description in applicant's disclosure, would result in applicant's invention, as now claimed in applicant's amended claims 15, 26 and 37, and their respective dependent claims.

In response, since both the description in Applicant's specification, pages 14-16 and Kikuchi patent relate to controlling the position of the focusing lens to an in-focus position, the Examiner considers that the system of the description in Applicant's specification, pages 14-16 is not different from the system of the Kikuchi patent. Further, the Applicant amended claim 15 with limitation "a position control unit which performs position control of said movable part via said actuator by updating the driving signal by a plurality of times during a vertical synchronizing period." The Examiner considers that the Applicant's conceded Prior Art, Figures 7-8, Specification, pages 14-16 does disclose this limitation. The Applicant's conceded Prior

Art, Figures 7-8, Specification, pages 14-16 discloses that the standard moving speed of the focusing lens is calculated by a plurality of times during one vertical synchronizing period

Claim Objections

2. Claims 15, 16, 19 are objected to because of the following informalities:

Claim 15 (line 11), "predetermined a vertical synchronizing period" should be change to --a vertical synchronizing period--.

Claim 16 (line 2), claim 40 (line 2), "position control means" should be changed to --position control unit--.

Claim 19 is objected as being dependent on claim 15.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 15, 19, 26, 30, 37-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kikuchi (U. S. Patent No. 5,212,598) in view of Applicant's conceded Prior Art, Figures 7-8, Specification, pages 2-18).

Regarding claim 15, Kikuchi discloses a lens control apparatus comprising a movable part (focusing lens F4, Figures 1A-1B, 2, Column 2, Lines 55-68) which is movable along an optical axis for performing focus adjustment; an actuator (focus driving motor 6, Figures 1A-1B, Column 2, Lines 55-68) which drives said movable part; a position-of-movable-part detecting unit (focusing position detector 7, Figures 1A-1B, Column 2, Line 67 – Column 3, Line 2) which detects a position of said movable part; a focus control unit (combination of optical detector 13 and system controller 14, Figures 1A-1B, Column 3, Lines 40-61) which determines a state of focus (optical detector 13 forms an AF detection signal for automatic focusing) and supplies a driving signal (system controller 14 supplies a driving signal to focusing driving motor 6) which causes said movable part to move toward an in-focus position, according to the determined state of focus.

Kikuchi fails to disclose a position control unit which performs position control of said movable part via said actuator by updating the driving signal by a plurality of times during a vertical synchronizing period. However, the Applicant's conceded Prior Art, Figures 7-8, Specification, pages 14-16, discloses that the standard moving speed of the focusing lens is calculated by a plurality of times during one vertical synchronizing period (updating the driving signal plurality of times during a vertical synchronizing period). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Kikuchi by the teaching of the Applicant's conceded Prior Art in order to prevent the occurrence of defocusing (Specification, page 14, lines 1-6).

Regarding claim 19, the Applicant's conceded Prior Art discloses the predetermined speed varies according to the determined state of focus (the standard moving speed of the focusing lens required to keep an in-focus state, Specification, page 5, lines 22-25).

Regarding claim 26, Kikuchi discloses a method of controlling an image pickup apparatus, comprising the steps of causing an actuator (focus driving motor 6, Figures 1A-1B, Column 2, Lines 55-68) to move a movable part (focusing lens F4, Figures 1A-1B, 2, Column 2, Lines 55-68) along an optical axis defined by a lens (focusing lens F4) and an image pickup element (CCD 8, Figures 1A-1B), said movable part being either one of the lens and the image pickup element; determining a state of focus (optical detector 13 forms an AF detection signal for automatic focusing, Figures 1A-1B, Column 3, Lines 40-50); and performing position control of said movable part so that said movable part moves toward an in-focus position, according to the determined state of focus (system controller 14 supplies a driving signal to the focusing driving motor 6, Figures 1A-1B, Column 3, Lines 56-61).

Kikuchi fails to disclose a driving signal for moving said movable part being given to said actuator while being updated by a plurality of times during a vertical synchronizing period. However, the Applicant's conceded Prior Art, Figures 7-8, Specification, pages 14-16, discloses that the standard moving speed of the focusing lens is calculated by a plurality of times during one vertical synchronizing period (a driving signal being updated by a plurality of times during a vertical synchronizing period). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Kikuchi by the teaching of the Applicant's conceded Prior Art in order to prevent the occurrence of defocusing (Specification, page 14, lines 1-6).

Regarding claim 30, the Applicant's conceded Prior Art discloses the predetermined speed varies according to the determined state of focus (the standard moving speed of the focusing lens required to keep an in-focus state, Specification, page 5, lines 22-25).

Regarding claim 37, Kikuchi discloses a lens control apparatus comprising a movable part (focusing lens F4, Figures 1A-1B, 2, Column 2, Lines 55-68) which is movable along an optical axis for performing focus adjustment; an actuator (focus driving motor 6, Figures 1A-1B, Column 2, Lines 55-68) which drives said movable part; a position-of-movable-part detecting unit (focusing position detector 7, Figures 1A-1B, Column 2, Line 67 – Column 3, Line 2) which detects a position of said movable part; a focus control unit (combination of optical detector 13 and system controller 14, Figures 1A-1B, Column 3, Lines 40-61) which determines a state of focus (optical detector 13 forms an AF detection signal for automatic focusing) and supplies a driving signal (system controller 14 supplies a driving signal to focusing driving motor 6) which causes said movable part to move toward an in-focus position, according to the determined state of focus.

Kikuchi fails to disclose a position control unit which performs position control of said movable part via said actuator by updating the driving signal by a plurality of times during a vertical synchronizing period so that an average moving speed of said movable part during the vertical synchronizing period becomes a predetermined speed. However, the Applicant's conceded Prior Art, Figures 7-8, Specification, pages 14-16, discloses that the standard moving speed of the focusing lens is calculated by a plurality of times during one vertical synchronizing

period (updating the driving signal plurality of times during a vertical synchronizing period). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Kikuchi by the teaching of the Applicant's conceded Prior Art in order to prevent the occurrence of defocusing (Specification, page 14, lines 1-6).

Regarding claim 38, Kikuchi discloses the actuator is linear motor (linear motor, Column 1, Lines 19-20).

Regarding claim 39, Kikuchi discloses image pickup means (CCD image pickup device 8, Figures 1A-1B, Column 3, Lines 25-30); said focus control means determining the state of focus by extracting a predetermined focus signal which varies according to the state of focus, from a picked-up image signal outputted from said image pickup means (optical detector 13 extract a predetermined focus signal from image signal output from CCD 8, Figures 1A-1B, Column 3, Lines 40-61).

Allowable Subject Matter

5. Claims 17-19/17, 28-30/28 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 17, the prior art of the record fails to show or fairly suggest an image pickup apparatus comprising focus control means, said focus control means including first control means for calculating a target position to which said movable part is made to move, on a

first control cycle according to the signal level of the focus voltage signal extracted by said extracting means; and second control means for updating the driving signal to be supplied to said actuator, on a second control cycle, said second control means executing updating of the driving signal on the second control cycle so that an average moving speed at which said movable part continues to move until said movable part reaches the target position calculated by said first control means becomes a predetermined speed, as well as so that said movable part gradually approaches the target position until said movable part reaches the target position.

Claims 18 and 19/17 are allowable for the reason given in claim 17.

Regarding claim 28, the prior art of the record fails to show or fairly suggest a method of controlling an image pickup apparatus, comprising the steps of performing position control of said movable part so that said movable part moves toward an in-focus position, according to the determined state of focus, a target position to which said movable part is made to move according to the signal level of the focus voltage signal being calculated on a first control cycle, and the driving signal to be given to said actuator being updated on a second control cycle so that an average moving speed at which said movable part continues to move until said movable part reaches the calculated target position becomes a predetermined speed, as well as so that said movable part gradually approaches the target position until said movable part reaches the target position.

Claims 29 and 30/28 are allowable for the reason given in claim 28.

6. Claims 16, 27, 40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 16, 40, the prior art of the record fails to show or fairly suggest a lens control apparatus, wherein said position control unit updates a target position n times during the vertical synchronizing period by an amount of movement, s/n, at a time with respect to an amount of movement, s, by which said movable part moves at the predetermined speed, and uses a driving signal corresponding to the updated target position as the driving signal to be supplied to said linear motor by said focus control means.

Regarding claim 27, the prior art of the record fails to show or fairly suggest a method of controlling an image pickup apparatus, wherein the driving signal which is given to said linear motor while a target position is being updated n times during the vertical synchronizing period by an amount of movement, s/n, at a time with respect to an amount of movement, s, by which said movable part moves at the predetermined speed is used as a driving signal corresponding to the updated target position.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUONG T NGUYEN whose telephone number is (703) 308-9297 or (571) 272-7315. The examiner can normally be reached on 7:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, WENDY GARBER can be reached on (571) 272-7308. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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09/17/05

THAU TRAN
PRIMARY EXAMINER